

A NEW TRANSTROCHANTERIC ROTATIONAL OSTEOTOMY

FIELD OF THE INVENTION

5 The present invention relates to a surgical method of treating a disease called
osteonecrosis of the femoral head which is caused by interruption of blood supply to the
femoral head. ~~This~~ The method comprises several surgical techniques including incision
of the hip joint capsule, osteotomy through the trochanteric area of the femur without
detaching the greater trochanter, rotation of the femoral head and neck portion, and
10 internal fixation with screws. In this procedure, the femoral head is rotated so that the
necrotic portion of the femoral head can be placed in the non-weight bearing ~~portion~~
region and the intact portion of the femoral head can be turned into the superior portion
to support the pelvis.

15 DESCRIPTION OF THE PROR ART

 Osteonecrosis of the femoral head ~~(1)~~ 1 is a disease coming from an
interruption of the blood supply to the femoral head. This condition leads to the
destruction of the femoral head, thus making the patients feel pain in the hip joint,
20 limitation of ~~the~~ joint motion, limping and, if it is severe, inability to walk.

 There have been known many kinds of surgical methods to treat this disease
including core decompression, multiple drilling, osteotomy, bone grafting, and hip
replacement. The fact that there have been many methods to treat this disease implies
that there has been no single best method. The present invention is a kind of
25 osteotomy. The previous methods of osteotomy could be divided into two categories:
proximal femoral varus osteotomy or flexion osteotomy and transtrochanteric rotational
osteotomy. The present invention is a kind of the transtrochanteric rotational
osteotomy (Figs. 1, 2, 3). The previously known transtrochanteric rotational
osteotomy has disadvantages to osteotomize the greater trochanter ~~(2)~~ 2 first and to
30 re-attach the greater trochanter with cerclage wiring ~~(5)~~ 5 at the end of the osteotomy
and fixation. It takes more time ~~of operation~~ to operate and has the possibility of the

nonunion of the greater trochanter.

Therefore, if the femoral head was destroyed despite many efforts to preserve the femoral head, there was no choice but to replace the hip with an artificial joint.

5 SUMMARY OF THE INVENTION

This invention is a surgical method to treat a disease called osteonecrosis of the femoral head which is caused by interruption of the blood supply to the femoral head. In many of the patients, the avascular area occupies the anterosuperior portion of the femoral head and the vascular area occupies the posteroinferior portion of the femoral head. ~~The~~ As the disease progresses, the avascular area ~~are finally collapsed~~ collapses producing hip pain. Further development of the disease ~~will lead~~ leads to arthritis of the hip joint and final destruction of the joint. ~~This~~ The present method was developed to treat this disease by rotating the femoral head. This method comprises several surgical techniques including skin incision for exposure, incision of the hip joint capsule, osteotomy through the trochanteric area of the femur without detaching the greater trochanter, rotation of the femoral head and neck portion, internal fixation with screws and closure of the skin. The purpose of these procedures is to ~~make~~ rotate the femoral head ~~rotated~~ so that the intact portion of the femoral head can support the pelvis and the necrotic portion of the femoral head can be placed in the non-weight bearing portion region.

BRIEF DESCRIPTION OF THE DRAWINGS

25 For fuller understanding of the nature and objects of the invention, reference should be made to the following detailed description taken in conjunction with the accompanying drawings in which:

FIG. 1 is a schematic diagram for illustrating the outline of the osteotomy of the conventional rotational transtrochanteric osteotomy. The greater trochanter is osteotomized first and another osteotomy is then performed perpendicular to the axis of the femoral neck.

FIG. 2 is a schematic diagram for illustrating the proximal femur after rotation of the femoral head and neck portion.

FIG. 3 is a schematic diagram for illustrating the fixation after the osteotomy
The greater trochanter ~~need also~~ needs also to be fixed with cerclage wiring.

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FIG. 4 is a schematic diagram for illustrating ~~the an~~ outline of the new
osteotomy. The osteotomy is performed without a complete detachment of the greater trochanter.

FIG. 5 is a schematic diagram for illustrating the proximal femur rotation of the femoral head and neck portion.

FIG. 6 is a schematic diagram for illustrating the fixation after the osteotomy and rotation of the femoral head and neck portion. There is no need for fixation of the greater trochanter.

DETAILED DESCRIPTION OF THE INVENTION

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A preferred embodiment of the present invention will now be described in detail with reference to the accompanying drawings (Fig. 4, 5, 6). First of all, with the patient in the lateral decubitus position, a skin incision is made over the hip and the femur. The capsule of the hip joint is exposed through a lateral approach. The anterior
side and posterior side of the hip are exposed. The short external rotators except
Quadratus femoris muscle are completely transected. The posterior column branch of
medial circumflex artery (3) 3 which is just above the lesser trochanter must be
preserved. The joint capsule is widely exposed anteriorly and posteriorly and is then
incised circumferentially.

The line of osteotomy (4) 4 is drawn as in Figure 4 and K-wires are placed
perpendicular to the neck, and X-ray is taken in the A-P plane to confirm the osteotomy

line before the transtrochanteric osteotomy.

If the level of osteotomy site is confirmed, the site is then osteotomized with a saw. The osteotomy site is separated and any remaining joint capsule is incised because the remaining joint capsule may prevent the rotation of the femoral head and neck portion. If the amount of rotation is satisfactory, the osteotomy site is temporarily fixed with pins or screws. The position of the osteotomy site is confirmed by using x-rays or image intensifiers. If the position is satisfactory again, the osteotomy site is fixated with screws (6). The muscle fascia and subcutaneous tissue are repaired over a suction drain. The skin is closed.

Osteonecrosis of the femoral head is a disease coming from an interruption of the blood supply to the femoral head. This condition, if untreated well, leads to the destruction of the femoral head making the patients feel pain in the hip joint, limitation of the joint motion, limping and, if it is severe, inability to walk, and finally leads to complete destruction of the joint, and the joint needs to be replaced with an artificial joint.

This invention is a surgical method of treating osteonecrosis of the femoral head by rotating the femoral head so that the intact portion of the femoral head can be rotated into superior portion and to support the pelvis without detaching the greater trochanter.

This invention has many advantages such as: no detachment of the greater trochanter, no fixation of the greater trochanter, less operation time, no anatomical disturbance of the greater trochanter, and early rehabilitation. With this new invention, the osteonecrosis of the femoral head can be treated much more easily and successfully with patients feeling minimal discomfort of the patients.

